



Occupational Covid-19 hazard in Austria: Are women really more exposed?

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Wittgenstein Centre Conference 2020: Demographic aspects of the Covid-19 pandemic and its consequences, November 30 - December 1, 2020

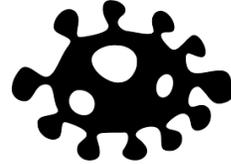
Outline

- Background 1: Covid-19 as an occupational hazard
- Background 2: Risk perception and gender#migrant background
- Survey data and results
 - Which sectors of the economy are associated with **high perceived risk**?
 - Does the **perceived risk** vary with the age and qualification level of employees?
 - Migrant background as a risk factor?
 - Are women more at risk? Risk perception versus actual hazard

Covid-19 as an occupational hazard

- **Theory:** Which occupations have the highest *potential* exposure to the coronavirus (COVID-19)? Two correlated factors (ONET – US Department of Labor and ONS – UK Office for National Statistics):

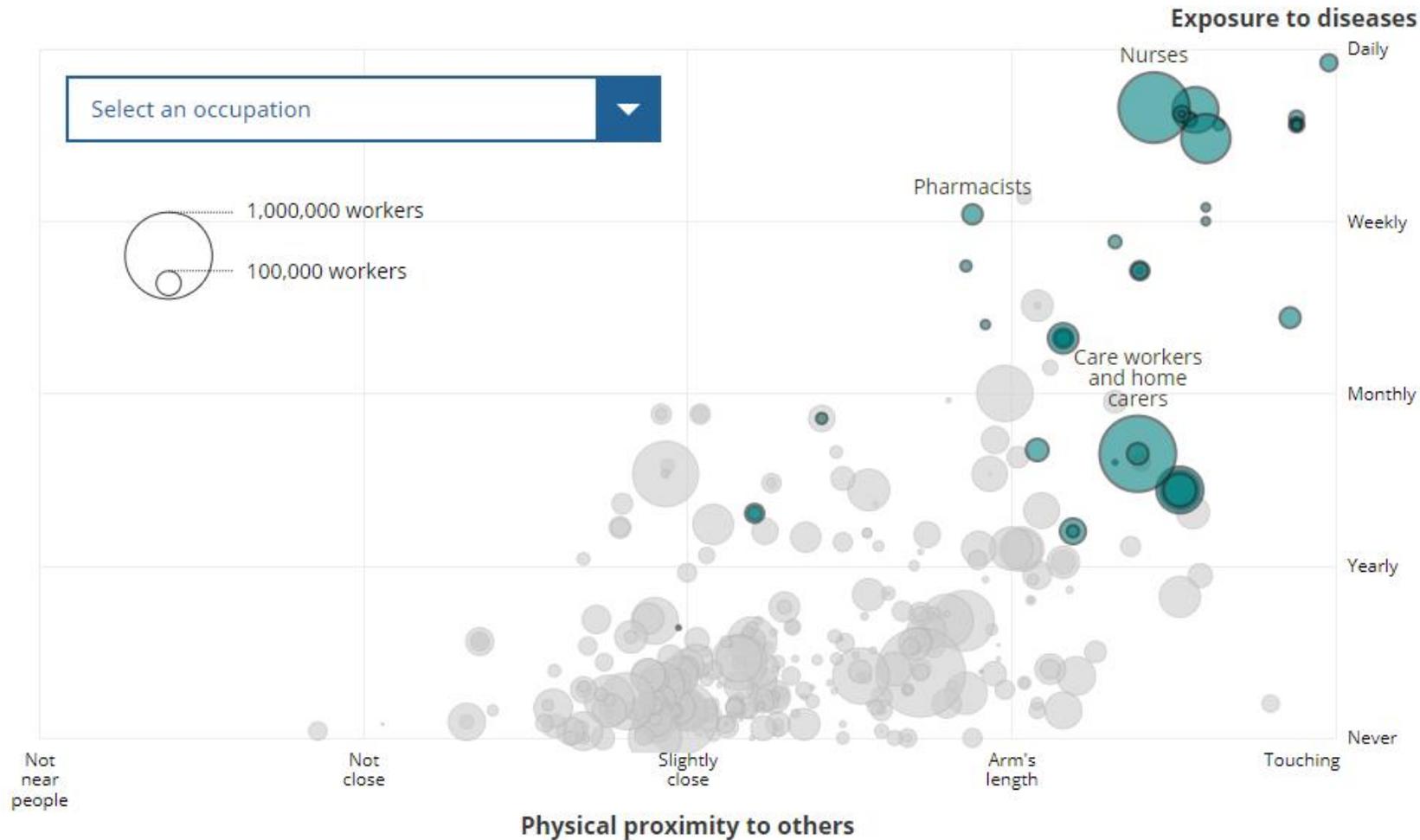
- Exposure to disease (generally)



- Physical proximity with others



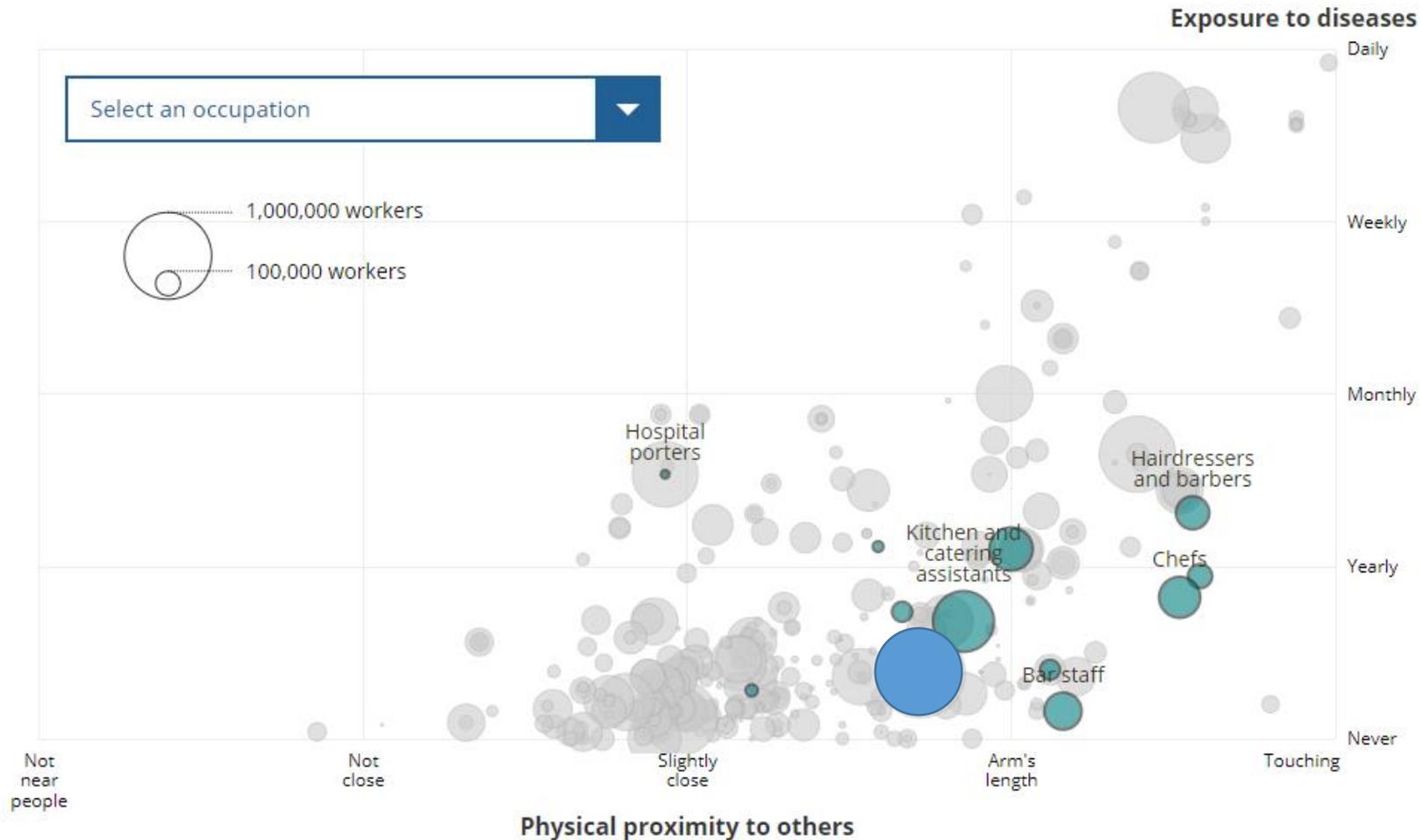
Covid-19 as an occupational hazard



Theory

Healthcare workers are exposed to disease on a daily basis and require close contact with others

Covid-19 as an occupational hazard



Theory

Some elementary occupations less exposed to disease, but do require close contact with others

Sales and retail assistants (in blue)

Covid-19 as an occupational hazard

- **Theory:** Who is working in those high-risk occupations?
 - Overrepresentation of women
 - Overrepresentation of groups with minority ethnic background
 - Overrepresentation of low paid workers
- = “essential” workers

Covid-19 as an occupational hazard

- **Evidence:**

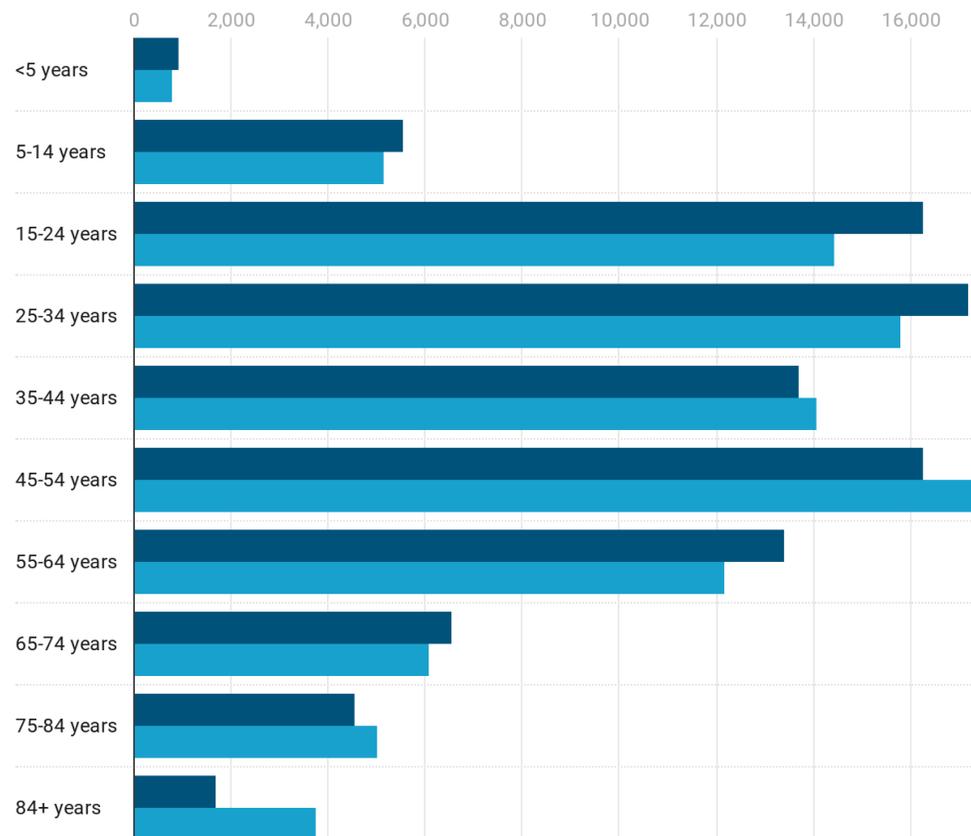
- Office for National Statistics (ONS): **Covid-19 related deaths by occupation** in England and Wales (March–May 2020). Evidence largely corroborates theoretical accounts – most at risk: those working in social care and health care, in elementary occupations (security guards taxi/bus drivers), sales and retail assistants.
 - **Caveat 1:** deaths rates not informative about differential infection risk (e.g. women equally likely to get infected, but less likely to die from Covid-19)
 - **Caveat 2:** data reflects where people work, not where or how they got infected
- First study to correlate the occupational risk factors proposed by ONS and the US Department of Labor to **actual data on COVID-19 infections** (Zhang 18 Nov 2020).
 - **Caveat 2:** data reflects where people work, not where or how they got infected

Covid-19 as an occupational hazard

Confirmed coronavirus (COVID-19) cases in Austria in 2020, by gender and age group

November 2020

Male Female



Source: BMSGPK (Österreich) • Created with Datawrapper

Sobotka et al. (2020): Based on data for 10 countries, they find a gender-neutral distribution of confirmed COVID-19 cases, but among **people of working age**, women diagnosed with COVID-19 substantially outnumber infected men.

Their hypothesis in conclusion:

“The higher burden of COVID-19 infections among women of prime working ages reflects their high representation in professions that are particularly exposed to the disease.”

Evidence for Austria: in core working age groups (esp. ages **45-54**) more female than male cases of Covid-19 (due to differential occupational exposure? **Caveat 2**).

Aim of this study

- Occupational hazard would ideally be measured in terms of **actual infections** combined with information on the occupations of those infection and on **where infection took place**.
 - Such data is not available
- Our focus: **perceived occupational hazard** (=context specific measure)
 - Survey data on perceived infection risk at work
 - Advantage: context-specific measure, focus on risk at workplace
 - Potential disadvantage: subjective risk assessment (cognitive bias)
- Aims: investigation of differences in risk assessment across groups (across occupations and within comparable occupational settings)

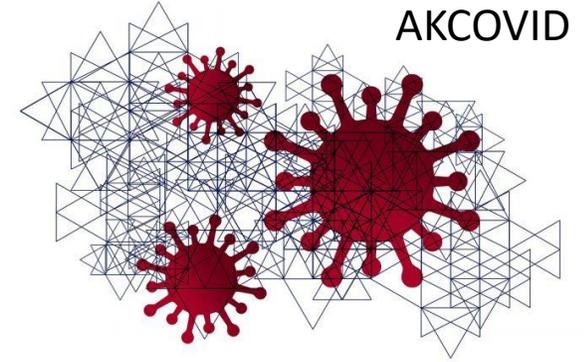
Risk perception and gender#ethnicity



- **Theory:** A substantial body of **risk research** indicates that women and men differ in their perceptions of risk (Gustafson 1998).
 - Social theories of gender: gendered practice giving rise to systematic gender differences in the perception of risk
 - Masculine norms that valorize bravery and strength
 - Feminine norms that valorize protection and nurturing
 - "women constantly worry a bit more" (Gustafson 1998: 806)
 - Intersection of gender and ethnicity: "**white male effect**" whereby men tend to perceive lower risks compared to women and ethnic minorities (Marshall 2004).
 - "**Social inequality effect**" instead of a "white male effect" (Olofsson & Rashid 2011)

Covid-19 risk perception and gender

- **Evidence:** Dryhurst et al. (2020): Risk perceptions of COVID-19 around the world. *Journal of Risk Research*.
 - **Covid-19 risk perception measured as an index**, covering affective, cognitive, and temporal-spatial dimensions
 - UK, USA, Australia, Germany, Spain, Italy, Sweden, Mexico, Japan, and South Korea.
 - Data collection mid-March to mid-April 2020, online surveys
 - Finding: **males perceive less risk compared to females** (pooled sample) controlling for knowledge and direct experience (but in country-by-country analysis only Germany, Spain and the UK, in all other countries, no gender difference)

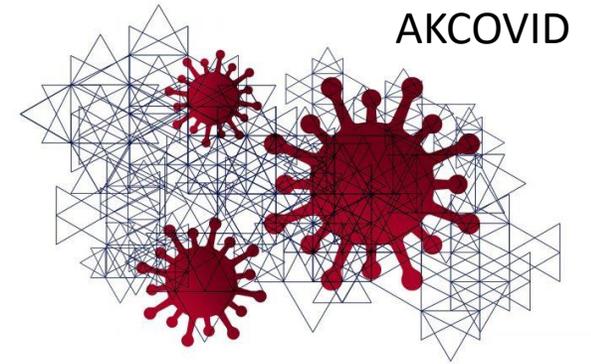


Survey data

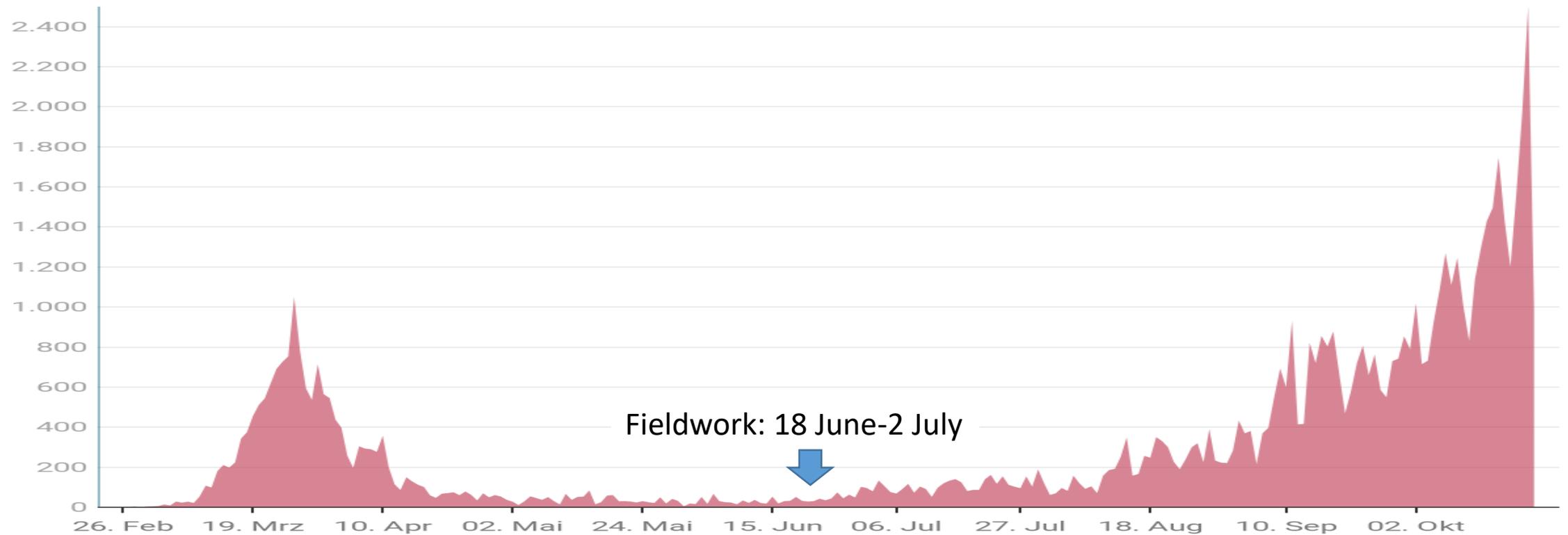
AKCOVID-Survey:

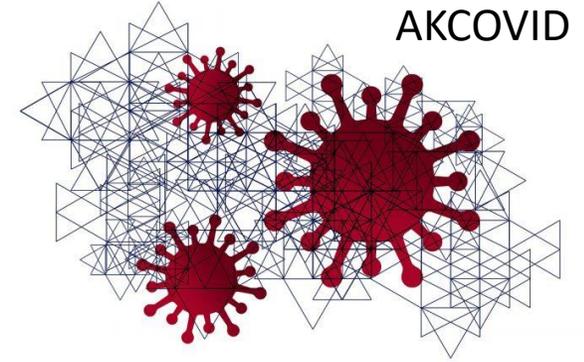
- representative survey of 2,000 persons living in Austria
 - Sample of analysis: 1,522 employed persons
 - 481 persons with experience of short-time work
 - 905 families with children aged <18, among which 421 with children <6
- fieldwork: June 2020 (CATI & CAWI) – follow-up planned for January 2021
- Topics: **risk perception at workplace**, social and economic consequences of the pandemic for families, changes in working conditions, mental health, unmet health care needs, etc.

Survey data



Number of registered Covid-19 infections in Austria





Survey data

- Central item for this study

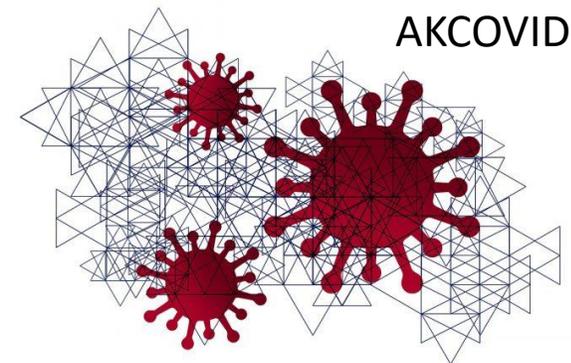
“Wie hoch schätzen Sie das Risiko ein, dass Sie sich im Rahmen Ihrer beruflichen Tätigkeit mit dem Corona-Virus anstecken?”

(sehr hoch, eher hoch, eher niedrig, sehr niedrig)

“How high do you estimate the risk that you will get infected with the Corona virus at work?”

(very high, rather high, rather low, very low)

Results



About a quarter of employed respondents estimated their occupational Covid-19 hazard as (very) high – 26% of women and 24% of men.

"How high do you estimate the risk that you will get infected with the Corona virus at your workplace"?

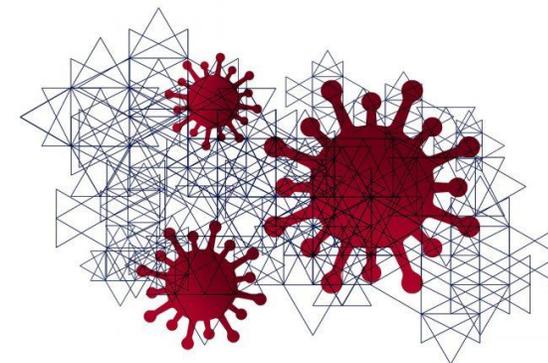
very high rather high rather low very low don't know



Sample: 1.522 employed persons, weighted.

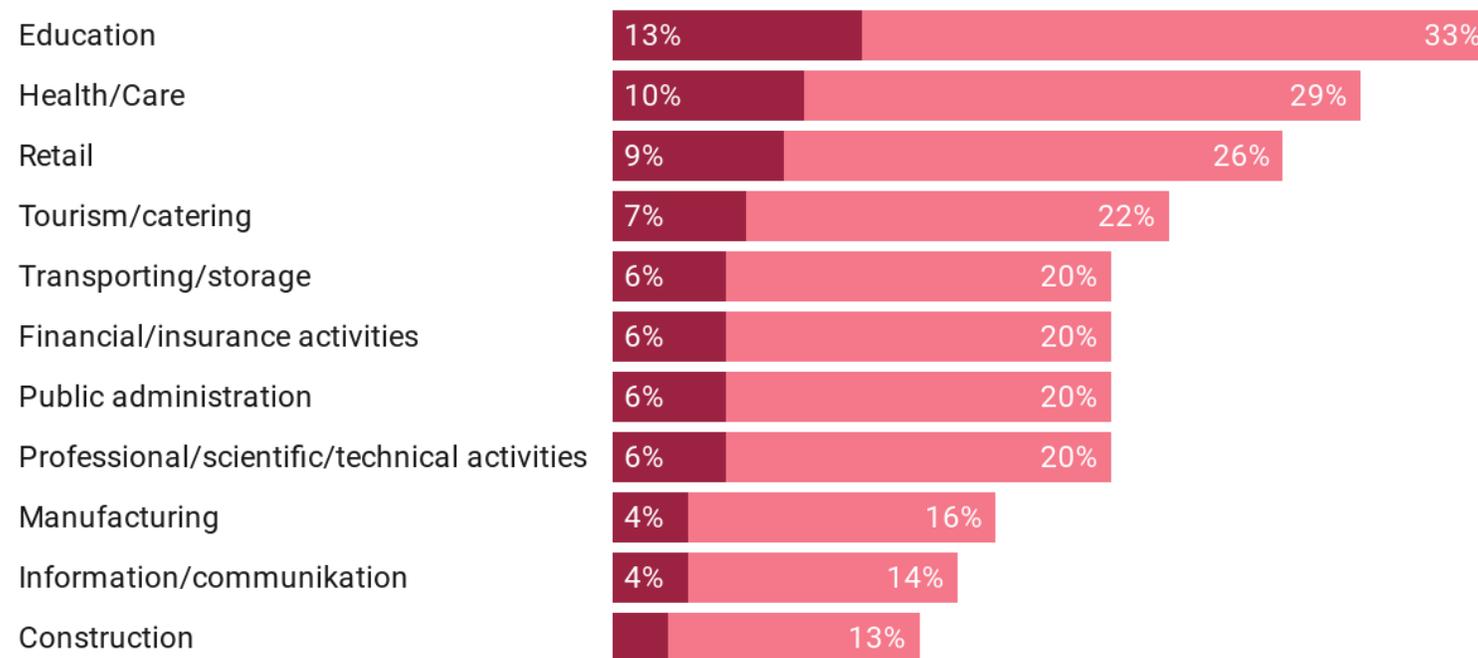
Chart: Nadia Steiber • Source: AKCOVID Survey 2020, data collected in June 2020 • Created with Datawrapper

Results



Perceived risk of infection with the Corona virus, by sector

very high high



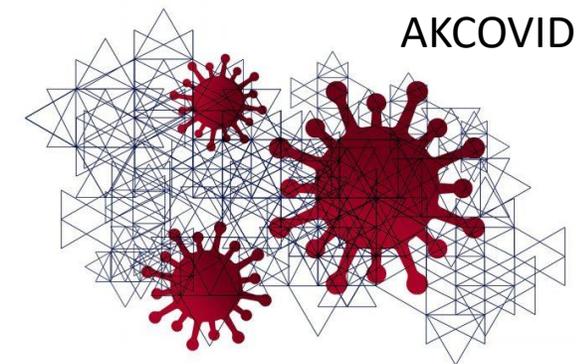
„high risk sectors“



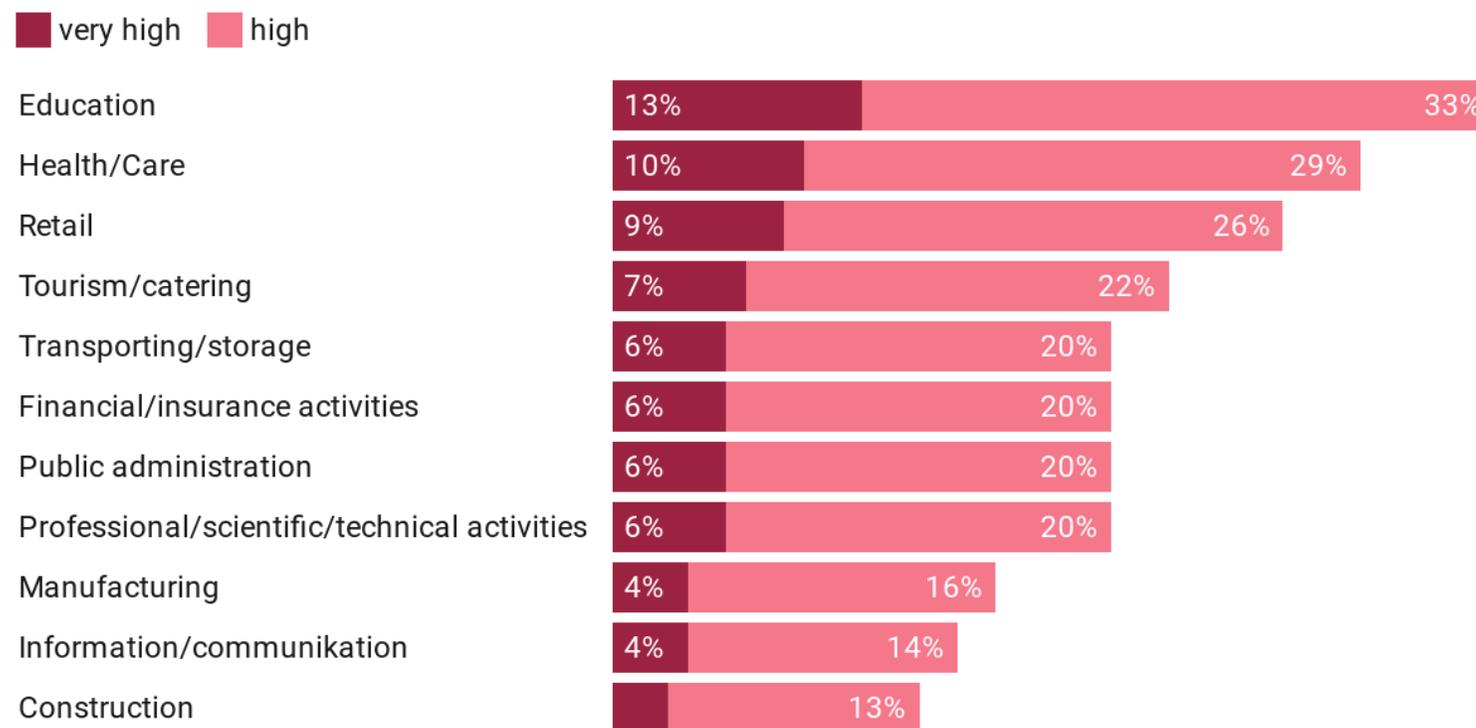
„low risk sectors“

Sample: 1,252 employed persons. Predicted probabilities based on an ordered logistic regression that controls for gender, age, education, Austrian citizenship and NUTS-2 region.

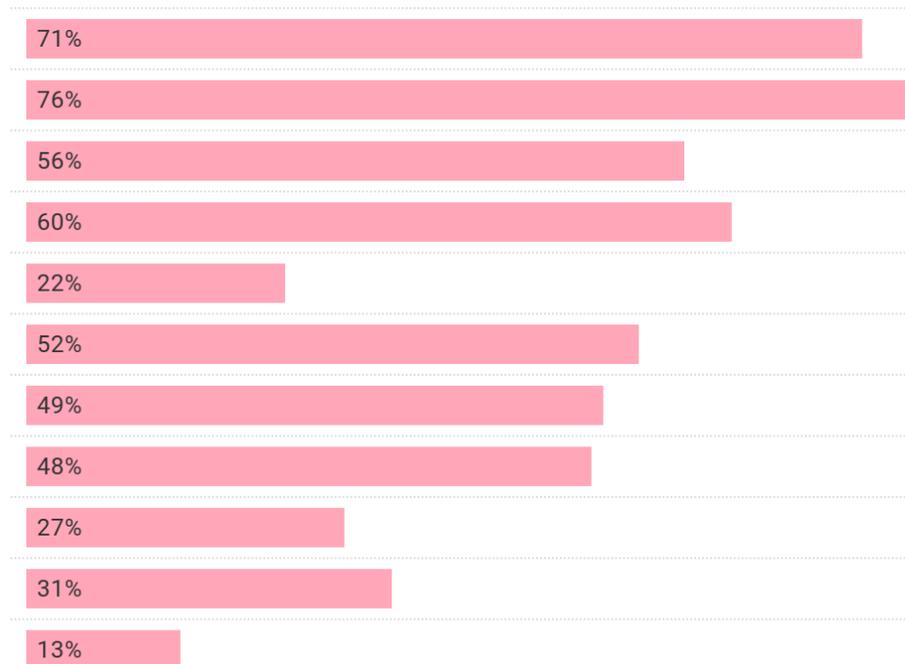
Results



Perceived risk of infection with the Corona virus, by sector

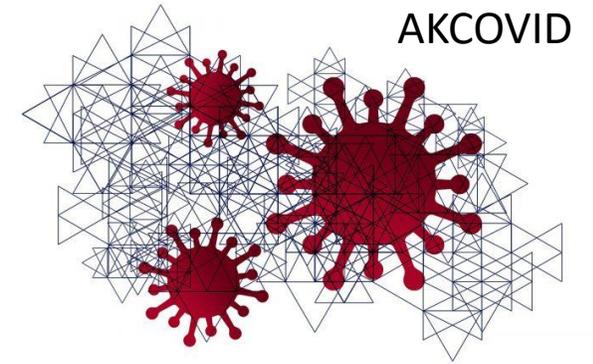


Share of female employees, by sector



Sample: 1,252 employed persons. Predicted probabilities based on an ordered logistic regression that controls for gender, age, education, Austrian citizenship and NUTS-2 region.

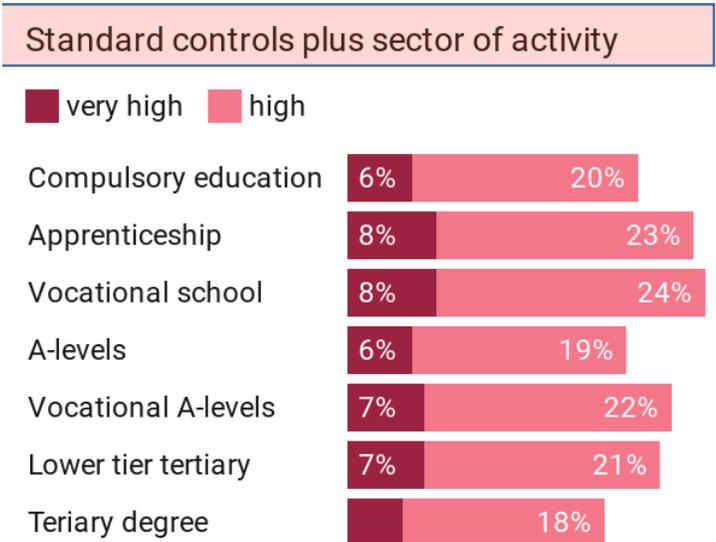
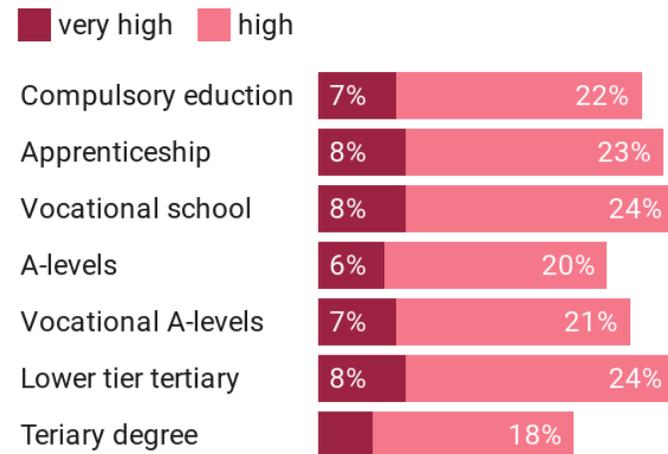
Results



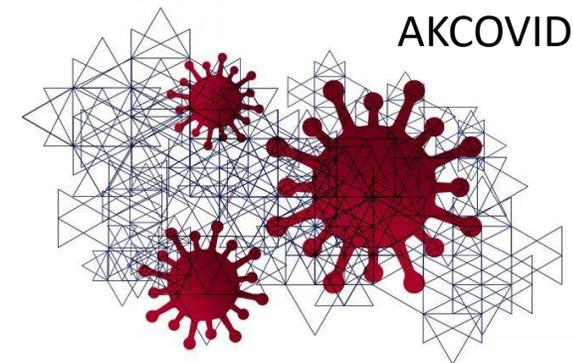
Differences by education are smallish, in the multivariate model non-sig.

Perceived risk of infection with the Corona virus, by education

Standard controls: gender, age, citizenship, household type, NUTS-2 region



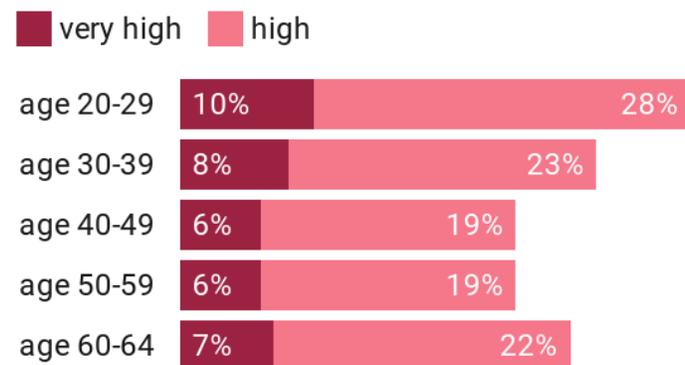
Results



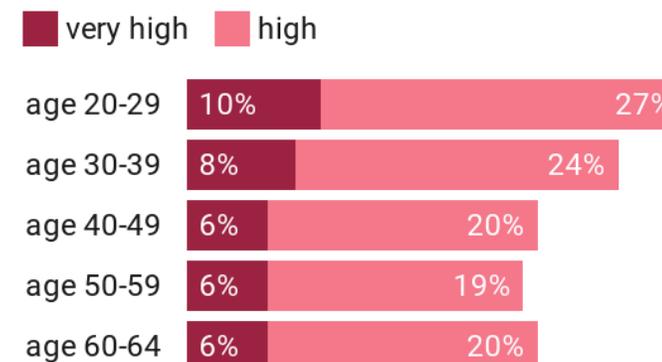
Age gradient – highest perceived risk among those aged below 30

Perceived risk of infection with the Corona virus, by age

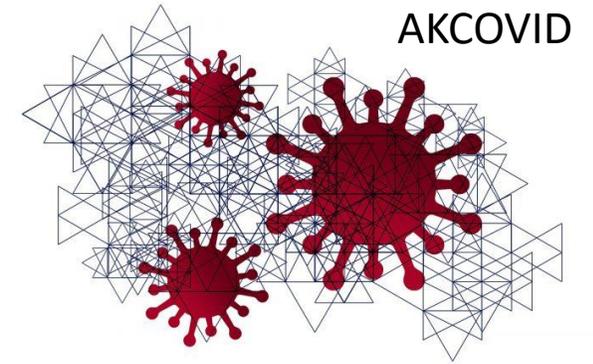
Standard controls: gender, education, citizenship, household type, NUTS-2 region



Standard controls plus sector of activity



Results

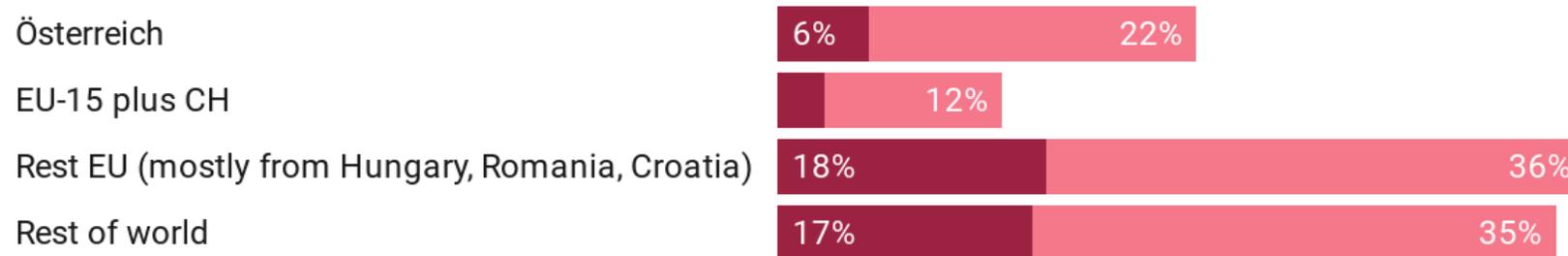


Where you are born matters – controlling for education and sector

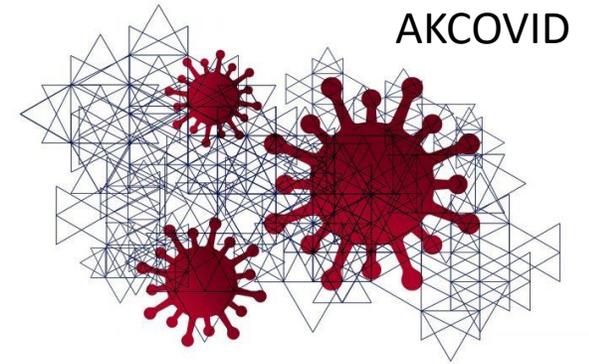
Perceived risk of infection with the Corona virus, by country of birth

Standard controls: gender, education, citizenship, household type, NUTS-2 region, sector of activity

■ very high ■ high

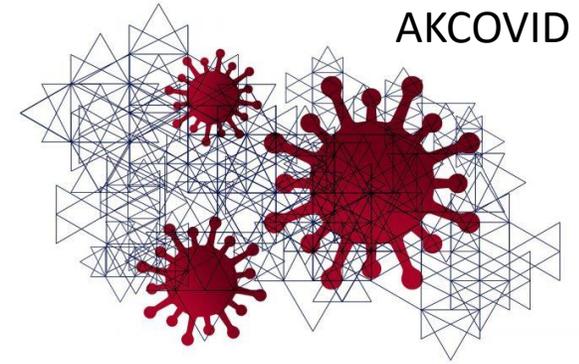


Sample; 1,252 employed persons. Predicted probabilities based on an ordered logistic regression model.



Are women more exposed?

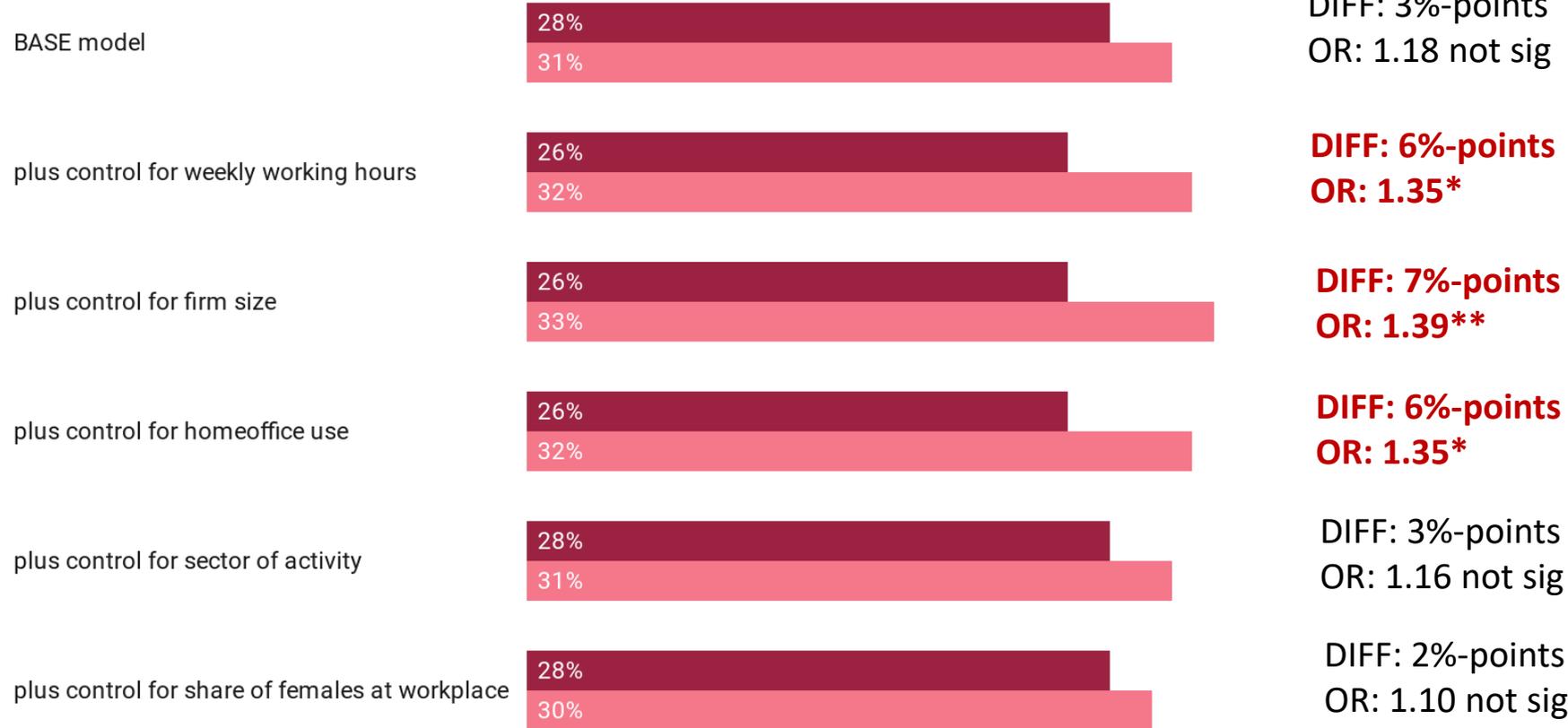
- Decomposition analysis – explaining away the gender effect
- The role played by the sector of activity
- The share of women/men at the workplace
- Gender differences within certain types of occupations



Perceived risk of infection with the Corona virus, by gender

Standard controls: gender, education, age, household type, NUTS-2 region, country of birth (=BASE model)

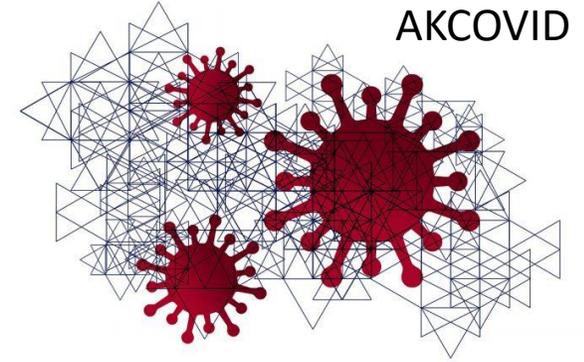
Male Female



KHB-Method

Diff in OR when accounting for coef. inflation is: 1.26 (OR dropping from 1.39** to 1.10 ns)

Predicted probability of (very) high risk perception



Perception of risk of contracting COVID-19 at the workplace

by gender composition of workplaces (share of co-workers being male/female)

■ somewhat high risk ■ very high risk

mostly men



more men than women



balanced



more women than men

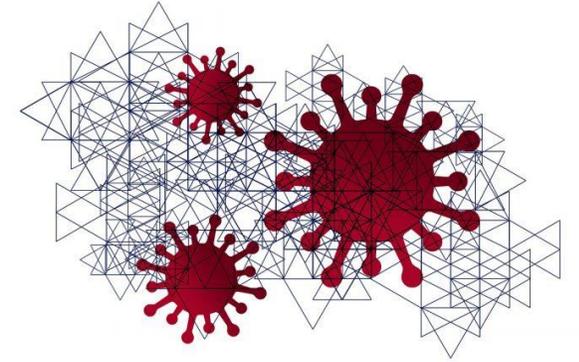


mostly women



Shown are predicted probabilities of perceiving a (very) high risk based on an ordinal logistic regression model, that models the predictive value of the gender composition of workplaces, controlling for gender, age, education, country of birth, household type, weekly working hours, firm size, and home office use.

No significant gender difference in risk perception. Gender composition of workplace matters!



Perception of risk of contracting COVID-19 at the workplace

by average level of risk perceived - grouping into low, medium and high risk sectors

■ Male ■ Female

low risk sectors (Manufacturing, ICT, Construction)



DIFF: 6%-points
OR: 1.59 not sig

medium risk sectors (Tourism, Transport, Public admin, fin services)



DIFF: 3%-points
OR: 0.86 not sig

high risk sectors (Education, retail, health/care)



DIFF: 3%-points
OR: 1.14 not sig

Shown are predicted probabilities of perceiving a (very) high risk based on an ordinal logistic regression model, controlling for gender, age, education, country of birth, household type, sector of activity, weekly working hours, firm size, and home office use.

Conclusion

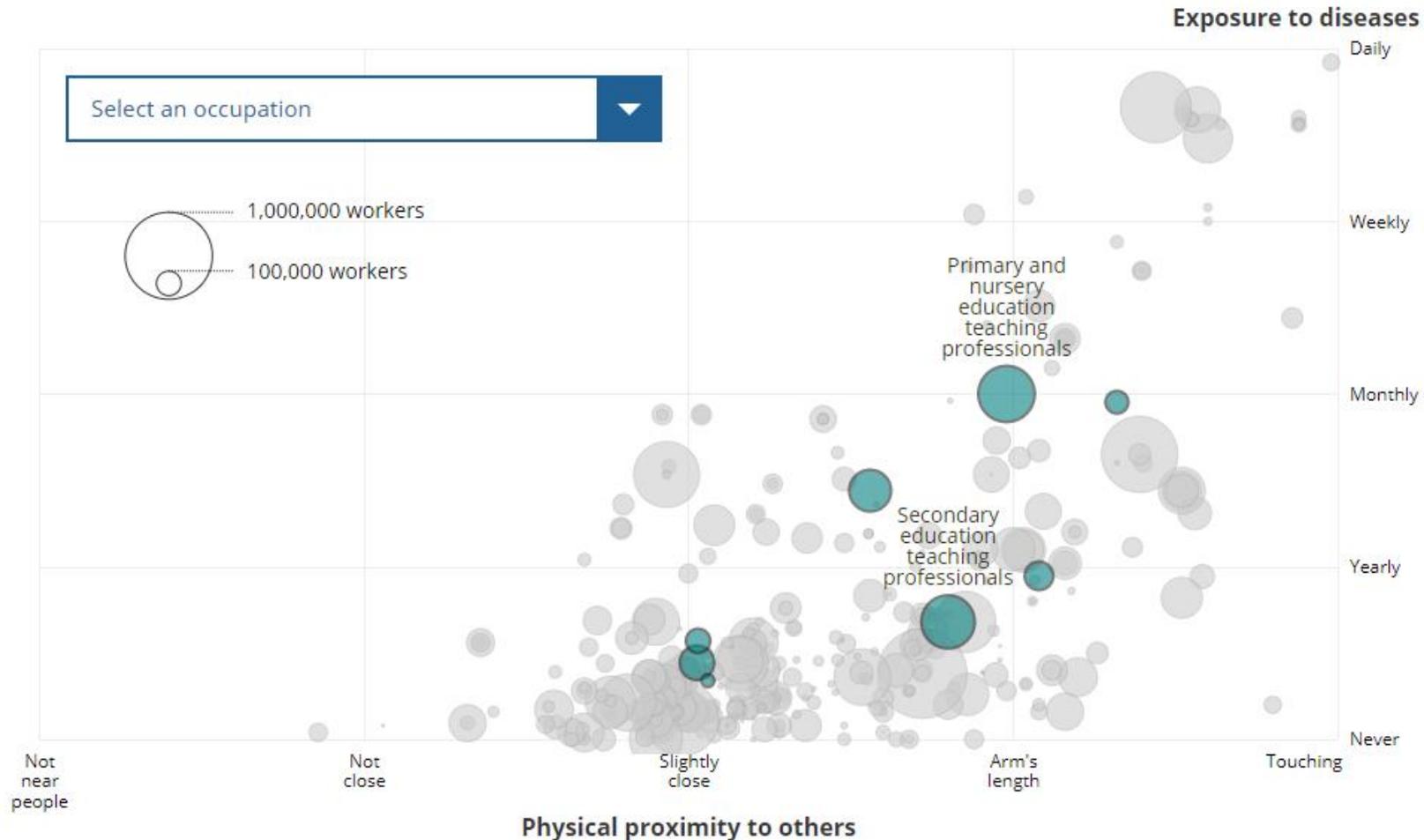
- Risk perceived as rather **high in some sectors** (35% or more perceive high risk), even though data has been collected during a low incidence period.
- Risk perceived to be high by more than half of workers with **migrant background** (i.e., not born in Austria, Germany Italy or Switzerland).
Persisting effect of migration status on risk perception.
- Risk perceived to be **highest in female dominated** essential industries (health care and social services, education and retail)
- Men and women **in comparable circumstances** perceive similar risks of infection – **no effect of gender *per se*** – *cognitive risk assessment*.



Appendix

Wittgenstein Centre Conference 2020: Demographic aspects of the Covid-19 pandemic and its consequences, November 30 - December 1, 2020

Covid-19 as an occupational hazard



Theory

Education workers slightly lower exposure to disease and proximity to others